Valuation Report

Financial Analysis Report of Microsoft Corporation (MSFT)

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1 Executive Summary

This report provides an analysis of Microsoft Corporation, with ticker “MSFT” (NASDAQ), listed on SP. Microsoft is a multinational technology corporation that specializes in developing, supporting, and licensing a extensive range of software products and services, designing and selling hardware, and supplying relevant online advertisements to a worldwide audience.

In this report, a DCF Model, Ratio Analysis and Analysis of Corporate Governance are used to calculate the true value of Microsoft’s shares. In the analysis of this paper it is assumed that historic trends of Microsoft such as that of sales, tax rate, depreciation, Capital Expenditure and EBIT are held constant, or continue their linear nature. It is also assumed that even in the case of a global recession, this recession won’t accept greatly Microsoft’s revenue growth due to the nature of their business. Furthermore, it is assumed that the executives at Microsoft will prioritize the long-term interest of their shareholders as they have done in the past decade.

The findings of this investigation are astonishing. All of the models and valuations method used point out to the same conclusion, that Microsoft is extremely undervalued, and thus is a great investment opportunity in the short-run and long-run in all market scenarios. Published research on the topic has a similar conclusion, with the majority of analyst recommending a long position on the stock given that its fair price is around $340 USD while its current market price is of $293 USD at the day of writing.

2 Company Overview

Microsoft Corporation, with ticker “MSFT” (NASDAQ) and listed on SP, is an American multinational technology corporation that was founded in 1975. The company specializes in developing, supporting, and licensing a extensive range of software products and services, designing and selling hardware, and by supplying relevant online advertisements to a worldwide audience. Microsoft’s main revenue segments are Productivity and Business Processes, Intelligent Cloud and More Personal Computing, which jointly generated $198,270 million USD in sales for the Fiscal Year 2022.

Microsoft’s Productivity and Business Processes, and Intelligent Cloud offerings face competition from various software and hardware companies, mainly Apple, Google, IBM, Oracle, and Amazon. Their More Personal Computing revenue stream faces fierce competition of majorly these same players, in addition to Sony, Nintendo, and other Video Games studios because of their stake in the electronic games industry. Nevertheless, due to their excellent arrange of products and services, their compatibility with existing widely used hardware and software, and their reputation among customers, the company has been able to achieve excellent revenue growth throughout the last five years, when compared with its competitors, as well as achieving a net margin of 36.69%, by far the highest profitability among its competitors.

Despite being a massive firm, Microsoft has a small executive leadership team made up of CEO Satya Nadella and: the President and Vice Chair, the Chief Marketing Officer, the Chief Human Resources Officer, the Chief Financial Officer, and the Executive Vice President for Business Development, Strategy, and Ventures. Only 0.08% of the equity of the company is held by insiders, while 72.23% of the shares are held by 5,918 institutions, with big stake holders such as Vanguard Group, Blackrock Inc. and State Street Corp. owning 8.42%, 7.01% and 4.02% of the shares respectively.

3 Economic and Industry Trends

The analysis presented in the subsequent sections contains several assumptions based on exogenous factors discuss here. Firstly, economic indicators point to an economic downturn that would likely impact revenue on all of our product and services lines. Vanguard assesses the probability of a recession at 25% over the next year, while Bloomberg estimates are around 47.5% and 65% over 24 months. Thus, the model in this paper assumes moderate, and even negative levels of growth compared to previous years. For example, the YOY growth between 2021 and 2022 of Microsoft's revenue streams (Productivity and Business Processes, Intelligent Cloud and More Personal Computing) was 13%, 20%, and 2% respectively, with a strongly accelerating positive trend in previous years; however, we assume in our base case YOY growth on revenue streams between 2022 and 2023 of 11%, 22% and -1% respectively. Growth is still strong in the Productivity and Business Processes and Intelligent Cloud streams as a result of increased demand, without any signs of stopping, for software and hardware in these sectors due to the competitive advantages it gives to its users. More information regarding our growth assumptions for later years can be seen in table 1.

The analysis of future cash flows also takes into account the intense competition that Microsoft faces in all its markets; nevertheless, it also assumes that the company will maintain its positioning as a market leader due to its strong corporate governance and clear goals.

3.1 Corporate Governance Analysis

It is widely acknowledged that corporate governance at Microsoft prioritize long-term interest of their shareholders, while maintaining internal checks and balances to foster responsible decision taking and accountability. This is best exemplified by the fact that in the past two decades the company re-structure its hierarchy and vision to adapt to an evolving market. This resulted in more investment and focus in profitable revenue streams and the annihilation of product and services lines that were not as profitable, which has led the company to have an impressive growth in share price over the last decade (over 870% in comparison to that in average of the SP 500 that was of 230%).

4 DCF Model

Using information from the Microsoft's annual report, trends can be derived to construct a pro forma balance sheet for the future performance of the company. Our first and strongest assumption is that of future revenue growth figures, shown in ***Table 1***. The future revenue figures, as explained in **Economic and Industry Trends** section are a result of high demand for Microsoft's products and services. Initially, revenues suffer of from slow growth in starting years when compared to historical figures found in Microsoft's annual report due to the possibility of a future recession.

Estimates YOY % Growth in Revenues	FY23E	FY24E	FY25E	FY26E	FY27E
Productivity and Business Processes					
Worst Case Scenario	8.50%	11.00%	13.00%	12.00%	12.00%
Base Case Scenario	11.00%	15.00%	17.00%	15.00%	14.00%
Best Case Scenario	13.50%	16.00%	18.00%	16.00%	15.00%
Intelligent Cloud					
Worst Case Scenario	20.00%	20.00%	19.00%	16.00%	15.00%
Base Case Scenario	22.00%	24.00%	20.00%	19.00%	17.00%
Best Case Scenario	23.00%	26.00%	23.00%	22.00%	20.00%
More Personal Computing					
Worst Case Scenario	-2.00%	0.00%	1.00%	2.00%	1.00%
Base Case Scenario	-1.00%	4.00%	4.00%	3.00%	2.00%
Best Case Scenario	1.00%	5.00%	6.00%	5.00%	5.00%

Table 1: Estimates % YOY Growth in Revenues

From these three cases (Worst Case, Base Case and Best Case scenario) it is possible to derive future revenues. These predicted revenues are shown below:

Predicted Revenues ($ in millions)	FY23E	FY24E	FY25E	FY26E	FY27E
Productivity and Business Processes					
Worst Case Scenario	68,749.94	76,312.43	86,233.05	96,581.02	108,170.74
Base Case Scenario	70,334.04	80,884.15	94,634.45	108,829.62	124,065.77
Best Case Scenario	71,918.14	83,425.04	98,441.55	114,192.20	131,321.03
Intelligent Cloud					
Worst Case Scenario	89,924.95	107,909.93	128,412.82	148,958.87	171,302.70
Base Case Scenario	91,806.22	113,839.71	136,607.66	162,563.11	190,198.84
Best Case Scenario	92,558.73	116,624.00	143,447.52	175,005.97	210,007.17
More Personal Computing					
Worst Case Scenario	58,461.90	58,461.90	59,046.52	60,227.45	60,829.72
Base Case Scenario	59,058.45	61,420.79	63,877.62	65,793.95	67,109.83
Best Case Scenario	60,251.55	63,264.13	67,059.98	70,412.97	73,933.62
Total					
Worst Case Scenario	217,136.79	242,684.27	273,692.39	305,767.34	340,303.17
Base Case Scenario	221,198.71	256,144.65	295,119.73	337,186.68	381,374.43
Best Case Scenario	224,728.42	263,313.17	308,949.04	359,611.15	415,261.82
Percentage Change Y/Y Total (GAAP)					
Worst Case Scenario	9.52%	11.77%	12.78%	11.72%	11.29%
Base Case Scenario	11.56%	15.80%	15.22%	14.25%	13.10%
Best Case Scenario	13.34%	17.17%	17.33%	16.40%	15.48%

Table 2: Predicted Revenues

Using these predicted revenue numbers, and trends from Microsoft's income and cash-flow statements, it is possible to create a pro forma balance sheet for the future performance of the company. This pro forma balance sheet is shown in ***Table 3***. To construct this balance sheet, the following assumptions are made:

- The rate of earnings before interest and taxes (EBIT) stays fairly constant with just small increments throughout time. This is plausible as the company optimizes its operations in their respective markets, and historically Microsoft has been able to maintain or increase their EBIT margins.
- Microsoft's tax rate stays at a constant rate of 14%. This assumption is supported by the firm's historic tax rates.
- Depreciation increases slowly and steadily towards the rate of capital expenditure following theory on the matter.
- Capital Expenditure and Change in Net Working Capital stay constant throughout time. This assumption is backed by the firm's historic figures.

For the sake of simplicity and space, just the pro forma balance sheet for the Base Case Scenario is presented. Subsequently, using these figures we will built our model; however, the method is the same for the other two scenarios (Best Case and Worst Case) and final results for these two scenes would be presented.

Prediceted Income Statement ($ in millions)	**FY21**	**FY22**	**FY23E**	**FY24E**	**FY25E**	**FY26E**	**FY27E**
Revenue	168,088.00	198,270.00	221,199	256,145	295,120	337,187	381,374
Percentage Change Y/Y (GAAP)	17.53%	17.95%	11.56%	15.80%	15.22%	14.25%	13.10%
EBIT	69,916	83,383	94,009	110,142	126,901	144,990	167,805
%margin	41.59%	42.06%	42.50%	43.00%	43.00%	43.00%	44.00%
Taxes	9,831.00	10,978.00	13,161.32	15,419.91	17,766.21	20,298.64	23,492.66
% of EBIT	14.06%	13.17%	14.00%	14.00%	14.00%	14.00%	14.00%
Predicted Cash Flow Statement ($ in millions)							
Depreciation	11,686.00	14,460.00	16,509.10	19,335.50	22,403.31	26,974.93	31,272.70
%of Revenue	6.95%	7.29%	7.46%	7.55%	7.59%	8.00%	8.20%
Capital Expenditure	20,622.00	23,886.00	26,543.85	30,737.36	35,414.37	40,462.40	45,764.93
%of Revenue	12.27%	12.05%	12.00%	12.00%	12.00%	12.00%	12.00%
Change in Net Working Capital	-922.00	-2825.00	-2182.51	-2527.31	-2911.87	-3326.93	-3762.92
%of Revenue	-0.55%	-1.42%	-0.99%	-0.99%	-0.99%	-0.99%	-0.99%

Table 3: Pro Forma Balance Sheet

Before creating the DCF model, it is necessary to first calculate the Weighted Average Cost of Capital (WACC). To do that, we used publicly available information and the WACC formula to obtain the result to the right ***Table 4***.

WACC Calculation ($ in millions)	
Market Cap	2,186,000.00
Cost of Equity	7.99%
Beta	0.93
Market Risk Premium	5.60%
Debt	49,781.00
Risk Free Rate	2.79%
Interest Rate	3.30%
(1-Tax)	0.86
WACC	7.87%

Having Obtained WACC, the DCF model is constructed using figures in *Table 3* and *Table 4*. Results are shown below in ***Table 5***:

DCF Modeling ($ in millions)	FY21	FY22	FY23E	FY24E	FY25E	FY26E	FY27E
(EBIT - Tax)	60,085	72,405	80,848	94,722	109,135	124,692	144,312
Depreciation	11,686.00	14,460.00	16,509.10	19,335.50	22,403.31	26,974.93	31,272.70
Capital Expenditure	20,622.00	23,886.00	26,543.85	30,737.36	35,414.37	40,462.40	45,764.93
Change in Net Working Capital	-922	-2825	-2182.508984	-2527.31127	-2911.868033	-3326.931475	-3762.920322
Free Cash Flow	50,227	60,154	68,631	80,793	93,212	107,877	133,583
WACC	7.87%	7.87%	7.87%	7.87%	7.87%	7.87%	7.87%
Year			1	2	3	4	5
PV Free Cash Flow			63,623.69	69,434.14	74,262.82	79,675.92	91,463.34

Table 5: DCF Model

The model yields highly interesting results. Assuming a perpetual growth rate of 4.00% (much slower than historic grow rates, even industry-wise) and given that the company has $104.750 billion USD in cash reserves, Microsoft has a terminal value of $2.458 trillion USD, an enterprise value of $2.836 trillion USD and an equity value of $2.891 trillion USD, which gives it a value per share of $387.58 USD in the Base Case Scenario, much higher that its current share price of $293.71 USD.

Figure 1 shows the different present value future cash-flows that each scenario produces.

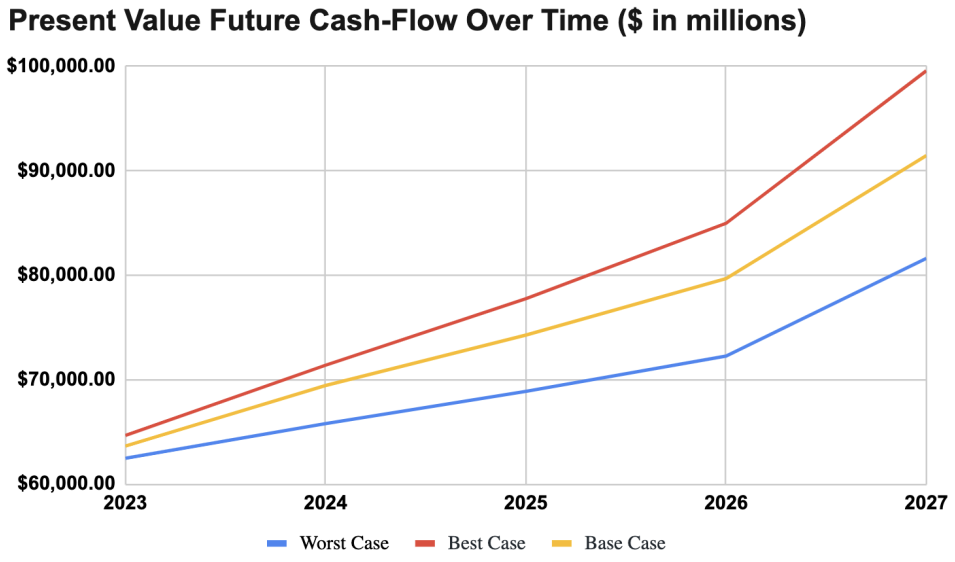

Figure 1: PV of FCF

Table 6 has the valuation and value of the share for Microsoft under each scenario.

Worst Case Scenario ($ in millions)		Base Case Scenario ($ in millions)		Best Case Scenario ($ in millions)	
Terminal Value	2,193,228.41	Terminal Value	2,457,929.64	Terminal Value	2,676,331.32
Enterprise Value	2,544,205.13	Enterprise Value	2,836,389.56	Enterprise Value	3,074,655.53
Equity Value	2,599,174.13	Equity Value	2,891,358.56	Equity Value	3,129,624.53
Value per Share	$348	Value per Share	$388	Value per Share	$419.52

Figure 1: Valuation and Value of Share per Case

5 Ratio Analysis

In order to compare Microsoft to similar companies, or companies in other industries to see if it would be a good buy we use ratio analysis. Using the equity values obtained in the model, ***Table 7*** is obtained.

Using ratios based on the pro forma balance sheet, it is seen that Microsoft in the near future will have ratios similar or better than those of its closest competitors in the industry: Amazon, Apple, etc. The information in the pro forma balance sheet seems to point out that these ratios will become better overtime in all scenarios. Thus, the ratio analysis, similarly to the DCF model, points out that Microsoft is a must buy.

Worst Case Scenario		Base Case Scenario		Best Case Scenario	
Current Share Price	$293.71	Current Share Price	$293.71	Current Share Price	$293.71
One- Year Forward P/E Ratio	30.7	One- Year Forward P/E Ratio	30.9	One- Year Forward P/E Ratio	30.4
Three-Year Forward P/E Ratio	31.8	Three-Year Forward P/E Ratio	29.5	Three-Year Forward P/E Ratio	28.2
Five-Year Forward P/E Ratio	26.8	Five-Year Forward P/E Ratio	24	Five-Year Forward P/E Ratio	22
Three-Year EPS	9.2	Three-Year EPS	10	Three-Year EPS	10.4
Five-Year EPS	10.9	Five-Year EPS	12.3	Five-Year EPS	13.3
Q Ratio	1.5	Q Ratio	1.7	Q Ratio	1.8
Quick Ratio	1.7	Quick Ratio	2.2	Quick Ratio	2.5
Current Ratio	1.8	Current ROE	1.8	Current ROE	1.8
Current Payout Ratio	25.08%	Current Payout Ratio	25.08%	Current Payout Ratio	25.08%
Equity Value	2,599,174.13	Equity Value	2,891,358.56	Equity Value	3,129,624.53
Value per Share	$348	Value per Share	$388	Value per Share	$419.00

Table 7: Ratio Analysis

6 Appraisal Conclusion

Both of the analysis executed in this paper, the valuation model used and the ratio analysis, point out that Microsoft is currently undervalued, both in the short-run and in the long-run, in all market-scenarios. Comparing the results obtained in this paper to that of analysts, it can be seen that the conclusion of this paper is supported by professionals. Yahoo finance categorizes this company as a buy with an average valuation of $336 USD, and a range of $136 USD. Even with the bearish market that investors have experience this year major banks and hedge funds still mantain a bullish view in this stock and because of that the equity of this company is majorly held by institutions. Moreover, due to the excellent track record that their governance has, their is a strong sentiment among investors that this could be one of the few positions that may outperform the market as it has done it the last decade. Thus, the author of this paper recommends the purchase of this stock as clearly there is an opportunity to make heavy profits by going long in this position.